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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/618,394	07/11/2003	Robert Bening	W-0006	5601

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KRATON POLYMERS U.S. LLC
WESTHOLLOW TECHNOLOGY CENTER
3333 HIGHWAY 6 SOUTH
HOUSTON, TX 77082

EXAMINER

ASINOVSKY, OLGA

ART UNIT	PAPER NUMBER
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1711

DATE MAILED: 02/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/618,394	BENING ET AL.	
	Examiner	Art Unit	
	Olga Asinovsky	1711	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 December 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 11-18 and 22-34 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 11-18 and 22-34 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>11/29 & 12/27/2004</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

The cancellation of claims 1-10 and 19-21 is noted.

Claim Rejections - 35 USC § 112

1. Claims 22-34 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
2. Claim 22 recites the limitation "wherein said copolymer is produced by the method of claim 11" in line 13. There is insufficient antecedent basis for this limitation in the new claim 22. Claim 11 discloses a method of making a radial styrenic block copolymer including a step (b) of adding a metal alkyl compound. New claim 22 does not require said metal alkyl compound. Thus, a product in claim 22 is different from a product by claimed process in claim 11.
3. Claims 23-34 are rejected in light of their dependency directly or indirectly upon the rejected above claim 22.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 11-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schade et al U.S. patent 6,506,846.

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6. The rejection is set in the office action mailed on 09/22/2004, pages 3-4, and it is incorporated here by reference.

7. Applicant's arguments filed Dec 27, 2004 have been fully considered but they are not persuasive. The argument is that in Schade's invention in the first step a diene monomer is polymerizing for producing a living polymer, whereas in the present invention (not in claims) styrene is polymerized to create a living homopolymer, page 7 in the remarks. The method in claim 11 discloses "contacting styrenic and dienic monomers" with an anionic initiator, thus a mixture of monomers is polymerized. Both monomers (styrene and diene) having an ethylenic unsaturation are anionic polymerizing within the same process conditions in step (a) in the present claim 11. The mixture of rubber blocks and styrene blocks in Schade are exactly the same as a mixture of styrenic blocks and dienic blocks in the present claim 11. It would have been obvious to one of ordinary skill in the art to consider that change the sequence or order of monomers being polymerized would provide adequate results for obtaining a block copolymer.

8. Also, applicants argue that Schade discloses a magnesium dialkyl compound for an anionic polymerization of a hard matrix in the second reaction zone, page 6 in the remarks. That Schade does not have a block copolymer without using a coupling agent, page 7, line 1 in the remarks. However, Schade discloses a metal organyl compound is a compound to control the anionic polymerization process such as a retarder, column 2, lines 8 and 17-23. Schade discloses a block copolymer polymerizable in the presence of lithium initiator. A metal organyl compound is a retarder to control the anionic

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polymerization process. Schade discloses styrene-butadiene block copolymer that can have a star shape using a polyfunctional coupling agent such as diethyl adipate, column 3, lines 63-64 and column 5, line 66. It would have been obvious to one of ordinary skill in the art to control polymerization process in Schade invention for producing a block copolymer such that a mixture of both styrene and diene monomers is added in the first step because the sequence of addition monomer or a mixture of monomers would provide adequate result for obtaining a block copolymer.

9. Claims 22-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dillman et al U.S. patent 5,420,203 in view of Schade et al U.S. patent 6,506,846. The new claim 22 requires that a block copolymer composition be produced by the method including a metal alkyl compound.

Dillman has been considered in the office action mailed on 09/22/2004, pages 2-3. The argument is that Dillman discloses a product having a high diblock content block copolymer. That Dillman does not disclose a radial styrenic block copolymer of the formula $(AB)_nX$ wherein n is three or four numbers. This is not persuasive. Dillman discloses radial block copolymer having $(A-B)_n-X$ configuration that is multiblock copolymer, column 3, line 64. The block copolymer has the same ingredients, the same anionic initiator=organolithium, the same coupling agent. The integer "n" would be inherent within the specified ranges in the present claims 23-26. The argument that Dillman discloses high diblock content in the block copolymer is not persuasive since a

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diblock can be present in range from 10% to 75% by weight of the total amount of the block copolymer.

Dillman does not disclose a metal alkyl compound.

Schade discloses block copolymer with a retarder such as a metal organyl compound, column 3, lines 62-65. A metal organyl compound is a compound to control the anionic polymerization process.

It would have been obvious to one of ordinary skill in the art to control the polymerization process in Dillman invention by adding a metal organyl compound as suggested by Schade as a benefit to control the polymerization process, and thereby, obtain a product by a process using a metal alkyl compound.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. References have been considered.

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

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extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Olga Asinovsky whose telephone number is 571-272-1066. The examiner can normally be reached on 9:00 to 5:30 pm.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on 571-272-1078. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

OA

February 2, 2005

Olga Asinovsky
Examiner
Art Unit 1711


James J. Seidleck
Supervisory Patent Examiner
Technology Center 1700